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Published in:
Innovation Management

DOI (link to publication from Publisher):
10.1515/9783110358759.39

Publication date:
2015

Document Version
Accepted author manuscript, peer reviewed version

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2 Uptake Of Market 'Induced Innovation' by Upstream Actors in Tanzania

Abstract: This chapter investigates the uptake of innovation induced by downstream actors by sunflowers SMEs in Tanzania with the use of an interview-based qualitative study of data collected in Dodoma, Tanzania. This study reveals that SMEs pay less attention to organizational innovation. However, they are much more focused on production innovation in the interest of servicing markets. Furthermore, the study reveals that a major factor that influences the uptake of innovation from downstream are not final consumers, but rather government agencies. For instance, most SMEs involved in the study search for funds to buy small oil refinery machines after government bans of the selling of raw oil. This suggests that processors still think consumers will absorb everything because there is lack of supply and demand is high.

2.1 Introduction

With the rapid rise of modern food retailing in developing countries, food suppliers experience spectacular changes in the value chain. One of the changes is the emergence of the retailers and consumers as the drivers of the value chain. This means that suppliers have to produce what the market wants, such as packaging materials, style, quality and the kind of information shared on the label. In this work, this phenomenon is referred to as 'market induced innovation'. This chapter responds to an appeal by Beuleans et al. for more research on how SMEs in agri-food businesses respond to and manage value chain innovation induced from downstream [1]. To achieve this objective the proposed chapter uses interviews with sunflower cooking oil processors in Tanzania to investigate how SMEs respond to innovation uptake from downstream.

Demand for cooking oil in Tanzania is estimated to be 250,000 metric tons per year in 2011 and is expected to grow between 5 and 6 percent annually [2]. Only 40 per cent is domestically produced [3]. It is estimated that the country imports 300,000 tons of cooking oil annually [4] which amounted to US$ 120 million [5]. Importation combined with domestic production exceeds the estimated domestic demand by 50,000 metric tons, indicating that perhaps some may be exported to neighboring countries. Importation of edible oil threatens the growth of locally processed oil. On the other

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hand, failure of local oil processors may be due to lack of innovation to meet market demand.

The major producers of cooking oil in Tanzania are Mount Meru in Arusha, with an estimated capacity of 50,000 metric tonnes per year, and Murzah Oil, with its factories in Dar-Es-Salaam.

Kuada states that there is lack of study of innovation in Africa [6]. Some of the few studies that have been conducted in Tanzania have focused on innovation at SMEs and in the manufacturing sector. De Bruijin and Mahemba conducted a study on SMEs innovation in Tanzania and identified that active relations among actors influence innovation [7]. Further, their study reveals that there is no relationship between the membership of business organizations and the innovative behavior of the SMEs. Another study by Musambala in Tanzania found that rural sunflower oil processors learn more from their competitors and that technology learning transfers take place based on the availability of appropriate technologies [8]. Despite great efforts to investigate innovation and SMEs in Tanzania there is less focus on the uptake of the innovation induced by downstream actors.

It is well known that innovation can be in the form of technology, market, or process, and can be accelerated internally or externally. We argue that manufacturers pushed product to the retailers without having the knowledge of the demand. The current chapter argues that the emergence of retailers as the driver and gatekeepers of different food items means that the supplied product has to meet market demand. This point highlights the importance of issues related to innovation.

It is important to understand the influence of different actors in the value chain with focus on upstream and downstream. Therefore, this chapter intends to fill that gap by investigating the uptake of downstream innovation by SMEs in Tanzania.

2.1.1 The concept of innovation

The emergence of consumers as the major drivers and influencing partners in the value chain introduced change from supply-push to demand-pull. With supply-push innovation the suppliers determine what to produce and when to deliver. In demand-pull consumers determine what to produce and when to produce. Therefore, demand-pull innovation requires that all actors in the production network have to work together to meet the market demand. The above market situation implies that innovation is no longer linear. There are many actors, such as retailers, consumers, regulators and suppliers having direct impact on the innovation process.

What is innovation? The concept of innovation is essential for the firm's success in the market place. Despite the concept being one of the reasons for the firm's success, there is no consensus of what innovation is [9]. In the food industry innovation is very important too, however the sector is one that has a low level of innovation compared with other industries.

Beuleans et al. define innovation as technologies invested or adapted in the focal market [10]. This definition intends to take technology as the source of all innovation. However, Omar argues technology alone could not be a source of innovation [11].

Grunert at al. define innovation as a process towards the development of a new product or service in which an integrated analysis and understanding of the users' wants, needs and preference formation play a key role [12]. This definition being inclusive of all actors in the value chain, especially downstream players such as customers, it has been criticized for being too broad by including customers and end users in consumer-oriented innovations that affect multiple actors of value chain [13]. On the other hand, retailers are reducing the number of actors in the value chain, which implies they like to work with processors or growers directly due to market competition. Given this process, it is obvious that some processors would be removed in some commodities' value chains in the interest of retailers. The emergence of private brands further reduces the value chain.

Schumpeter referred to innovation as the creation of new combinations [14, 15]. Schumpeter's definition of innovation is based on the assumption that innovation can take place at a stage of production for the improvement of delivery of product regardless of the level of technology used. One of the major problems that faces Africa' food sector is the availability of high quality products all year around at all locations [16]. Therefore, important innovations are not taking place in the laboratory alone – some innovations must take place at the market level, such as changes in selling and procurement policies. This study adopts Schumpeter's definition because it is associated with either breakthrough or incremental innovation that occurs at any stage, such as production, process, or organization.

2.2 Literature review

2.2.1 Innovation in the value chain

Figure 2.1 shows that there are several elements of value chain that influence decisions of the processor regarding innovation. External factors influence innovation of the downstream actors, such as retailers and suppliers, in many ways, such as through policies, regulations and laws. For example, governmental agencies in a particular country can ban the use of certain ingredients, but the same material or input can be used in the neighboring countries. Furthermore, because suppliers and retailers don't have machinery to control pirating, the higher the level of enforcement the more the chances actors in the value chain have to be innovative.

Consumers are major players in the innovation of the actors in the upstream and downstream. However, the decisions of consumers are influenced in some situations by the countries' policies and information they receive from non-governmental organizations (NGOs) and government agencies.

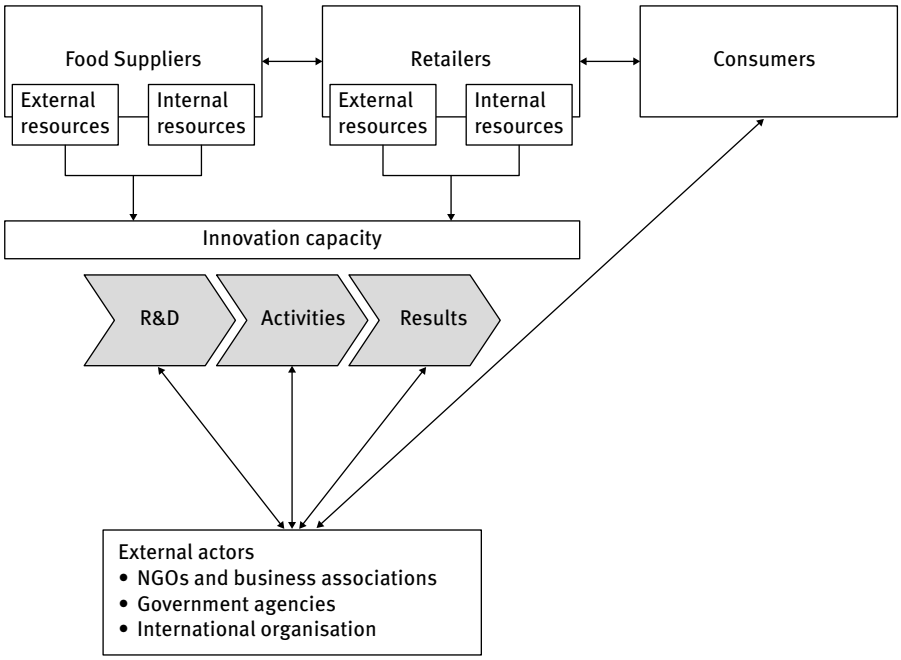

Fig. 2.1. Innovation capacity at company and value chain. Source: Modified from [17–19]

Internal resources refer to the research and development (R&D) structure and a vast number of firms' characteristics such as size, financial structure, qualified staff, experience of the manager and openness to new ideas, all of which influence innovation processes ([20, 21]).

External resources refer to the firms' strategic environment and include the potential for business-to-business relationships, available infrastructure for collaboration and networking, and access to support from research providers and government [22]. Here the focus is on the environment in which firms operate its impacts on the firms' innovations. Gellynck et al. argue however that researchers have largely overlooked the ubiquitous influence of the institutional environment and how interorganizational relationships, such as marketing channels, are embedded in the larger social context [23]. The firm's external network support to foster firms' innovation is very important in considering how the firms establish relationships with other actors in the network. Figure 2.1 shows that there is direct contact between retailers and consumers, however decisions of retailers are greatly influenced by external factors such as NGOs,

government agencies and international organizations. Gellynck et al. argue that external drivers of innovation are forces caused by regulation, changes in the food sector and social pressures [23]. So for any innovation to be meaningful from either a firm level or an industrial level, it has to get support from the external actors who have direct influence on the consumer's purchases. Scozzi et al. found that government regulation influences network structure in India [24]. As a result, government policies can influence trust and power between actors in the network which may influence the sharing of information among actors in the network.

Levels of innovation

Innovation in the food industry can be categorized into three levels, which are process, product and organization innovations. Empirical evidence indicates that innovation in the food industry is at the level of process and product innovation [25, 26]. Furthermore, research shows that SMEs in the food industry focus much more on process and product innovations, and ignore organizational innovation [27].

2.2.1.1 Product innovation

Product innovation can be an old product in a new market, or a new product with new features, or an old product that has added new features. In the food industry firms can introduce new innovation with packaging or change of brand color or style and shape while the ingredients can be the same or slightly different. In general, product innovation can range from radical to incremental innovation.

1. Radical innovation causes marketing and technological discontinuities at both the macro- and micro-level.
2. Incremental innovation occurs at the micro level and causes either a marketing or technological discontinuity but not both.

Both radical innovation and incremental innovation have the advantages of adding to the economic growth of a country and to the performance of the individual. However, in the food industry R&D occurs rarely at the SMEs due to the resources required and the risk associated with it.

2.2.1.2 Process innovation

The process of innovation involves creation, design, production, first use and diffusions of new products, their processes, services and or systems [28]. At this stage innovation heavily depends on technology and human skills. The firm size can be a major source of innovation, with its resource capabilities of employing skilled staff and introducing appropriate technology to support innovation. However, technology in not

necessary, depending on the technology, for success, but diffusions is very important. Therefore at the firm level there must be link between its innovation efforts and marketing innovation. This will be explained in Section 2.2.1.3.

2.2.1.3 Organizational innovation

With the increase of competition in the food value chain, actors in the network have to deliver products on time and at the right price and be more effective. Organizational innovation involves changes introduced by actors that facilitate activities of the other members in the network that focus on the assurance of speed and the availability of product to consumers. Organizational innovation may include implementation of new management tools, changes in staff policy and changes in purchasing and sales policies of the firm. Previous studies in developed countries have shown that actors in the food industry rarely take into consideration organizational innovations [29, 30]. However, organizational innovation might facilitate other types of innovation, such as product and process [31], and could contribute to the performance and effectiveness of the individual firms and the chain networks they operate in [32].

2.2.2 Innovation capacity at the firm level

Figure 2.1 shows that innovation capacity at the firm level is the ability of the firm to develop new products or services throughout all innovation processes, which consists of three steps: efforts, activities and results. However, this capability is determined by the power and flexibility to choose partners among actors in the network [33, 34]. To reduce the cost of changing partners, it is very important for actors in the value chain to identify what each actor would bring in. Further, the focus has to be on human behavior instead of technologies or working capital. Ghauri and Kemp argue that resources are heterogeneous among firms, so to understand how firms may establish collaboration in the chain it's important to differentiate between accessed resources and embedded resources [35]. This may affect the firm's commitments and trust, and opportunistic behavior may occur.

Innovation efforts can be categorized as non-structured human and structured resources [36]. The focus here is to see how human knowledge and skills are used in the organization to develop and introduce new ideas to capture market demand. However, knowledge and skills alone could not have an impact without allocation of resources to finance new inventions such as attending training and trade shows.

Innovation result is the stage at which firms expected to benefit from the efforts they have injected into the innovation at the level of process, product, organizational and marketing strategies. However, to benefit from the sum of the resources invested the firm has to have capacity to not only capture market demand but also to fight against imitations and pirates. Further, government agencies have a great role in influ-

encing entrepreneurs to invest their scarce resources through enforcement of the laws and observing the rule of laws. Therefore, in some industries firms' behavior towards innovation can be influenced by the external environmental and the context in which it operates.

2.2.3 Innovation in the food industry driven by modern retailers

The agri-food industry is generally considered as the low tech sector [37, 38]. However, studies conducted on innovation in the food industry indicate that retailers in developed countries are more innovative due to the increase of their power and introduction of their own brand. In a study conducted in the UK, Omar found that UK retailers are keen on innovation and the introduction of different quality standards as well as employing food technologists since the emergence of their own brand [39]. Nevertheless,Kottila found that in Sweden food manufacturers developed products in-house for consumers and not by working with them inside or outside the supply chain [40]. This indicates lack of involvement of external actors and in particular downstream actors on food innovation processes.

Establishing interorganizational relationships such as alliances, partnerships, collaborations and joint ventures is of increasing important in today's highly competitive market ([41, 42]). Modern food retailing is growing in Tanzania and is very dynamic with a focus on capturing consumers' demands. This creates many pressures on retailers to choose the partners that can enable them to meet consumers' needs in an efficient and effective manner. One of the very important dimensions in interorganizational relationship is the exchange of information. Reardon and Weatherspoon argue that partners in supply chains within a food sector can access new markets and better product design via e-collaboration [43]. Kimeme et al. proved that ICT enables suppliers in Tanzania to implement consumer-driven demand [44].

One pillar that controls the interorganizational relationship is trust in sharing information. The retailer is in contact with many consumers in a day. This gives retailers power to be a major sources of information in the food value chain. However, sharing information among partners that may support innovation depends on the trust that exists between retailers and suppliers.

Previous studies in innovation focused on upstream innovation with interest of understanding buyer-retailer relationships and supply chain structure after the emergence of modern food retailing in developing economies. Dabas et al. found in India government policies and regulation influenced innovation in upstream and supply chain structures [45]. These policies, such as retail price setting which India implements, can limit innovation. Other studies conducted excluded retailers [46] but included buyers like wholesalers and distributors. RLDC found that knowledge-sharing among actors in the organic food industry is very low compared with the information they possess, which limit their opportunities to innovative [47].

Kuada and Gellynck et al. argue that in a relationship with a high level of trust, conflict would be resolved in an early phase and in a way that satisfies both partners [48, 49]. One of the conflicts that emerged since the rise of modern food retailing in Africa is on the retailers' payment policy, a power imbalance whereby retailers punish suppliers if supplied items were not sold for the cost of shelves space [50].

2.2.3.1 Implication for Tanzania

The food industry which is dominated with SMEs is growing, however, it is faced with a number of challenges, such lack of finance. Despite those challenges indigenous entrepreneurs are investing in value addition and upgrading. However, investment in R&D in the food sector is carried out at the university level and other research institutions with the support from donors, government agencies and international organizations.

Previous studies conducted in Tanzania found SMEs in garments and wood markers are accessing information from different sources such as radio, newspaper, and social media to support them in adapting to changes in the business environment ([51]). However, studies conducted in the country have not paid attention to how actors in the value chain exchange information to support their innovativeness. Ndyetabula appeals for a study that takes into consideration the external environment of agri-food firms in Tanzania in order to understand its impact on innovation and entrepreneurship [52]. The current project induced food innovation in a value chain network within external business environments.

Tanzania and Africa in general have experienced massive changes in its urban food landscape. This has been accelerated with the increase of income and swelling of the middle class.

2.3 Methodology

2.3.1 Data collection

A qualitative method was employed for this study and interviews were used for data collection. Data were collected from SME sunflower processors in Dodoma, Tanzania. Sunflower oil processors were selected because sunflower is one of the oil seeds that has reported a great improvement in the country compared with other seeds such as palm oil, ground nuts, cotton seeds and sesame. A recent study found that innovation spreads very fast in the sunflower processing sector in Tanzania compared with other oil seed commodities [53]. Sunflowers are grown in different part of the country, such as Dodoma and Singida, however Dodoma was selected because the sunflower processing sector is highly advanced due to the number of initiatives taken at the macro, meso and micro level. Furthermore, the Dodoma region is major producer

of sunflowers in the country, and is estimated to produce 22 per cent of the country's production [54]. These reasons meant selection of Dodoma as the area for studying the innovation uptake of SMEs is viable compared with other parts of the country.

Participants included in the study are owners, managers, accountants and directors. Table 2.1 shows seven participants that were recruited for the study, all from Dodoma as our previous argument for selection suggests. One owner of modern retailing firms is found in the same city. SME firms were selected based on previous experience of the researchers working with them in various training and research programmes. Therefore, approaching and contacting the processors was based on snowballing and previous experience. Further, availability of their food produce in various food retail stores was used by researchers to decide which firms to contact.

Interviews were conducted at SMEs' premises after an agreement with researchers when and at what time to visit them. Data were collected with two researchers with a tape recorder or camera after getting the acceptance of interviewee. One interviewer was tasked with controlling the interview process and asking questions while the second interviewer took notes. A semi-structured interview was used to enable researchers to have similar questions for all participants in the study. Semi-structured questions were developed from various literature (e.g. [55, 56]). The original semi-structured interview was developed in English and later translated in Kiswahili which is a common language in Tanzania. A Kiswahili checklist was used for the interview and all interviews were collected using the Kiswahili language. On average each interview took 40 minutes. All recorded information was transcribed for further analysis. Qualitative data were manually handled.

Table 2.1. Description of respondents' profile

Name of the Firm	position of interviewee	Work experience	Interviewee's Education level
Kisasa Supplies Limited	Manager	4 years	Degree
Uncle Milo sunflower Cooking Oil	Accountant	10 years	Higher diploma
Nyemo Investment	Director	10 years	Degree
Ringo Consolidated Company Limited	Director	10 years	Degree
Furaha Dodoma Oil Mills	Manager	1 year	Higher diploma
The 3sisters	Manager/Owner	10 years	Secondary school
Edith Mills	One of owner	10 years	Degree
Pasua Mini-super market	Manager	5 years	Secondary school

2.3.2 Data analysis

This study seeks to investigate how oil processors in Tanzania uptake induced innovation by downstream actors in Tanzania. To analyze qualitative data this study used thematic framework analysis. There are a number of ways of doing thematic framework analysis. The selection of which style to use depends on the basis of the theory and text itself or on the basis of both [57]. Coding framework thematic analysis is based on established criteria. Here the researcher can specify the topic or words. Framework analysis is based on the emerging of the pattern on the determined elements. By using literature on trust, network theory, and innovation, different parameters have been identified as being relevant for the analysis of downstream induced innovation in Tanzania as the guide for the framework. The techniques for analysis of qualitative data can be used in interview script or reports. Attride-Stirling identifies four stages for content framework thematic analysis which are [58]:

1. developing a coding schedule
2. organizing the coded text as themes
3. establishing the common themes
4. analyzing the theme provided by the basic coded material

This paper categorized text into code sentences, basic themes, organizing theme and global theme as shown in Table 2.2.

2.3.3 The analysis step

2.3.3.1 Developing coding materials

Qualitative thematic framework analysis is better adapted to research that has a specific questions, a limited time frame, a predesigned sample and prior issues [59]. This paper used framework qualitative thematic analysis to analyze the uptake of induced innovation by SMEs in Tanzania. The procedure is good for analyses of the comments of the people whom have been affected by the new system of food distribution that is rising in Africa.

Codes: A total of 23 codes as shown in Table 2.2 were developed. Due to the nature of the study some codes appeared in more than one global theme that we developed. Predetermined words used for identification of the codes were:

- *Trust*, including assets, loan repayment records and reputation. Focus is on all activities performed by retailers which affect their reputation among actors.
- *Product innovation*, including products attributes, how they get information and what they have done.
- *Organization innovation*, including sales, loans, distribution policies (regulation).
- *Technological innovation*, including kinds of technology, access to technologies, and support in accessing technologies.

Basic theme: After reduction of the text, the data that have been derived as the codes is assembled together as the basic theme. Attride-Stirling indicates that although it is simply the renaming of the codes it is still crucial and helpful for the creation of the thematic framework [60]. Table 2.2 shows seven basic themes developed from the codes.

Organizing theme: These are themes clustered together from many issues in the basic themes. Table 2.2 shows some of organizing themes that emerged after the joining of the basic themes. After identifying the themes and examining the underlying issues the organizing themes were named.

Global theme: The global theme is the summary of the claim, proposition, argument, assertion or assumption of the organizing theme [61]. The global theme simply reflects ideas behind organizing themes. However, to understand what global themes represent one has to read from global to the basic theme, then coded data. Therefore, for interpretation purposes the author goes back to the data again to understand the meaning of the global theme in a particular context.

2.4 Findings

2.4.1 Organizational innovation

This study finds that SMEs perceive organizational innovation is not an activity that they could do to improve their various activities despite a number of challenges they face. For instance, SMEs in oil processing face non-loan repayment. Despite this, most of them have no guidelines on lending, such as how much and what amount is the limit borrowers can take. Further SMEs perceive business guidelines that would control and improve their performance have to be formulated by central government. One respondent said:

> "You know business policy is so wide. Policy is something to be formulated and implemented by the government."

This has been so because most of the SMEs in food processing believe innovation to be a breakthrough and not an incremental process which would improve their day-to-day activities in their field.

2.4.1.1 Production innovation

Market dynamics have significant influence on changes in production innovation. In general, the study found that government agencies, final consumers and distributors create pressure on sunflower oil processors to adopt or introduce production innovation.

Table 2.2. Thematic Framework network (from codes to global theme)

Code sentences	Basic themes	Organisation theme	Global theme
– We don't trust all information – I don't have to trust anyone – Even financial systems don't trust anyone…why should I trust somebody	Don't trust each other	Lack of trust	Skeptical about market innovation ideas
– We don't trust all information – Telephones – Mail – Social network is for gossip – Mobile phones are used to search for market price	Means of communication Don't trust market information	Market information	Less use of means of communication
– Consumer demand – Higher learning institutions – Retailers opinion	Source of innovation	Product information	Market driven innovation
– Tanzania Bureau of Standards mark – Sealed products – Refinery process – Modern consumers – They are looking for labels	Packaging Branding Food processing	Product attributes	Process innovation
– Law does not constrain us but directs us what to do – No sell policy… policy is very wide and has to be done by the government – No I don't have any guidelines of distribution – Yes some consumers don't pay us…in many times – Last year I got loss of (Tsh*) 3 million – We don't keep records…so we don't understand how much but on average loss amount to (Tsh*)1.5 million – We have all the receipts and every day we are saying will write but we don't	Firm's regulation	Country regulation	Lack of organizational innovation

Note: Tsh stands for Tanzania shilling added by interviewers for clarification

For example, SMEs changed their production systems by separating the packaging unit far from the processing unit after inspection by government agencies involved with food and standards (Tanzania Foods Drugs Authority [TFDA] and Tanzania Bureau of Standards [TBS]). However, some of them introduced aluminum galvanized tanks as storage with pipes that pumped crude processed oil from the processing unit to the packaging unit. This simple innovation, used by all interviewed processors, in-

tends to reduce the contamination of processed oil and limit direct human contact with processed oil.

Empirical evidence shows firms in developing countries can introduce technological innovation by two major means: (i) by learning through the multinational corporations (MNCs) activities, and (ii) by linkage through universities.

Vertical learning through MNCs depends much on spillover effects of foreign direct investment, but this kind of thinking assumes that there is no internal innovation generation in developing countries. Dantas et al. suggest that for any firms that benefit from university linkages innovation absorptive capacity is very important [62].

2.4.1.2 Uptake ability

In general, research on SMEs and innovation agree that the ability of SMEs to introduce innovation is hindered by a lack of funds. However, SMEs can introduce other forms of innovation such as organization and production innovation. But to manage to initiate and introduce other forms of innovations which are not breakthrough innovation ability of uptake is very important.

Innovation uptake ability of SMEs in the value chain from downstream act overs in the value chain has been investigated in this study. In general this study has indicated that SMEs in food processing in Tanzania are driven to introduce innovation, and in particular technology, as a response to government watchdog initiatives.

Absorptive capacity does not only include the ability to introduce new technology, but for SMEs also the ability to fight pirated products. We asked SMEs how they reduce the chances of their products being pirated. One of the interviewees said:

> "I face this problem. Last time one of the distributors in Dar-Es-Salaam complained about the quality of our products. But, we identified it was not my products although the brand was mine. Generally I cannot fight pirated brands of my cooking oil product and I know some people are using that weakness."

2.4.1.3 Lack of trust among actors in the value chain

One of the areas that reduces the uptake of innovation by processors induced by downstream actors in the sunflower processing industry in Tanzania is lack of trust among players in the value chain. Our study indicates that processors don't trust information received from distributors on market information and attributes demanded by final consumers. This is similar to the findings of Gellynck and Kühne, who found that SMEs food manufacturers have no collaboration with retailers, which limits their chances to access information and knowledge to support their innovation initiatives [63]. However, processors learn horizontally and not from actors in the vertical food chain. One of the interviewees said:

> "We bought this machine when one of the processor introduced this machine."

The delay of processors of sunflower oil to introduce new innovation in Tanzania can be attributed to many reasons, such as lack of a stable market, availability of raw materials, inadequate working capital, and reliability of the kind of technology to be adopted. For instance, SMEs interviewed were reluctant to adopt new technology made locally in the sunflower refinery process due to lack of assurance if the new machine complies with TBS standards. One of the interviewees said:

> "I am not sure if TBS would allow this technology invented by VETA. Which can be used for cooking oil refinery? Therefore, I better not use this machine."

2.4.1.4 Reluctance to internally originated new ideas

One of the major sources of innovation for any firm is internal employees. This kind of innovation can be in different forms, such as breakthrough or incremental. However, African employees are afraid to suggest new ideas for the improvement of their performance for fear of losing their jobs [64]. Further, the author argues that the African culture of not telling what you think is good to your seniors. Fear of how they may react limits the exchange of ideas and learning of new ideas in companies in the continent.

This study has found that SMEs are reluctant to adopt new aides induced by internal employees. This can be attributed to two major reasons: (i) fear of making loss, and (ii) lack of adequate knowledge of new ideas. One interviewee said:

> "It's our technicians who insisted we use s pump and install s pipe to allow raw oil to flow from the processing unit to the packaging room. This costs a lot of money but reduces contamination in the produce. Took us some time before we decided to implement an idea which we have today."

2.4.1.5 Influence of external organizations

One of the major institutions that support innovation in Tanzania to be adopted by SMEs is universities. However, there is a contrast in the participation of the higher learning institutions in facilitating the uptake of innovation in Tanzania. De Bruijin and Mahemba found there is weak involvement of universities [65], while Musambala and Azatyan et al. found universities have strong influence on SMEs' innovation uptake as external actors [66, 67]. This study revealed that SMEs' innovation uptake is facilitated by universities, which have a high role in innovation uptake. One of the interviewees said:

> "Major source of innovation includes universities which we are working very closely with."

With the rise of retailers as drivers of value chain in Africa, it's likely that the number of intermediaries have increased in the spread of innovation in developing economies. For example, this study finds that oil processors receive opinions from retailers. But the study also reveals that oil processors are skeptical of the information they receive

from actors on the value chain for technological or organization upgrading in Tanzania. Diyamett and Wangwe found that there are few linkages between technological institutions and manufacturing firms at any level in Tanzania [68]. This correlates with our finding that SMEs are skeptical of innovation ideas from downstream or any external actors.

2.5 Conclusion

This study intends to investigate the uptake of innovation induced by downstream actors by sunflowers SMEs in Tanzania in response to an appeal by Beuleans et al. [69]. This study reveals that SMEs pay little attention to organizational innovation. However, they are very focused on production innovation with interest in servicing the market. Further, the study reveals that major factors that influence the uptake of innovation from downstream are not final consumers but government agencies. For instance, most of the SMEs involved in the study search for funds to buy small oil refinery machines after government bans of the selling of raw oil. This suggests that processors still think consumers will absorb everything because there is lack of supply and demand is high.

However, the flood of imported foods in the local market indicates that consumers in Tanzania are no longer absorbing what is found at the market. Instead, they are more selective, which implies that for a firm to survive it has to be more innovative. Nevertheless, SMEs are ambitious to meet the needs of market by inducing different innovation, but this study found that they don't trust information received from downstream players. This limits their speed in implementing various concepts advised by the final consumers through distributors. We presume this was fueled by the shorter kind of relationship between actors in the value chain. Another important finding in this study is that SMEs in Tanzania don't pay attention to organizational innovation that may speed up the distributions of their produce. This finding is similar to that of Mutambi, who finds that SMEs in Uganda sideline organizational innovation and pay attention to production and technological innovation [70].

This study investigated SMEs' uptake of downstream induced innovation in the sunflower value chain. This study used qualitative analysis, and we argue for more qualitative study, such as case studies, to investigate the effect of SMEs accepting induced innovation from the downstream market in other agri-processing sectors. Case studies would allow us to learn the effect of successful and collapsed firms after acceptance of induced downstream innovation. A previous study by Kuada investigates the impact of power and influence on acceptance of innovation in biscuit marking in Ghana [71]. However, this study focused on snacks for export market, whereas we need to understand how firms in agro-processing diversify after unbalanced power relations affect induced innovation, and how they adapt to this shock market change

following the failure after the rejection of the downstream buyers. Further study can be done on the capacities of African SMEs to absorb downstream activities.

Further research can also be on the involvement of external actors on the introduction and inducement of innovation in Africa. For example, some innovation is with the initiatives of NGOs in agri-processing, but what influence do emerging retailers have? The current study has tried to identify this, but we need more study on this, particularly on international and local retailing firms operating in Africa. More study has to be done on the effects of externally versus internally initiated innovation on the impact of development of SMEs. This can be on different perspectives from entrepreneurship, management, development economics and finance.

Previous studies in Tanzania have contrary findings on innovation and performance of firms. Kristiansen, Knudsen et al. found there is a link between innovation and firm success [72, 73]. However, De Bruijin and Mahemba found there is a weak link between firm performance and innovation in Tanzania [74]. This suggests that there is more research needed and future research has to be qualitative so that we can learn how entrepreneurs respond to the poor performance despite investigations they have made into innovation in Tanzania. Further, this study has to concern certain commodities instead of having a basket number of SMEs from the food sector [75]. Focus has to be on a specific commodity's value chain for a clear understanding of innovation uptake and diffusion of the actors vertically and horizontally. One of major limitations in this study is lack of information from consumers on the innovation induced by them, if it has been implemented by SMEs, and how they perceive those changes.

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